REMARKS

Claims 1-6 and 8-24 appear in this application for the Examiner's review and consideration. Claims 4 and 8-11 have been amended to correct informalities set forth in the action, claim 21 has been amended to delete the terms 'preventing', 'alleviating' and 'prophylactically', and claim 7 has been cancelled. Support for these changes is present in the originally filed claims as well as the specification so that there is no issue of new matter.

Claims 21-24 were rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The Examiner states that the terms 'preventing' and 'alleviating' are not enabled by the specification. In response, claim 21 has been amended to delete 'preventing', 'alleviating' and 'prophylactically' from claim 21, as suggested by the Examiner. In view of this amendment, the enablement rejection has been overcome and should be withdrawn.

Claims 7-17 were rejected as being indefinite due to improper dependency since claim 7 is a substantial duplicate in claim 4. In response, the claims have been amended to correct this informality. Specifically, claim 4 has been amended to include the presence of a pharmaceutically acceptable carrier or excipient, claim 7 has been cancelled, and claims 8-11 have been amended to correct their dependency. In view of this amendment, the rejection has been overcome and should be withdrawn.

Claims 1-10, 15-16 and 18-24 were rejected under 35 U.S.C. 102(b) as being anticipated over US patent 5,284,867 to Kloog et al. for the reasons set forth on page 6 of the action.

Kloog et al .disclose the compound HU-211 (dexanabinol), i.e. the (3S,4S) enantiomer of 1,1-dimethylheptyl-(3S,4S)-7-hydroxy-Δ^6-tetrahydrocannabinol, which is 'essentially free' of the (3R,4R) enantiomer. The Examiner's position is that that the compound of Kloog et al. has an enantiomeric excess of 99.90% over the (3R,4R) enantiomer, since there is no evidence or showing to the contrary. Applicants respectfully disagree. As stated in the specification, the crystallization performed in the last step of the synthesis of dexanabinol is crucial for the purity of the final product. Specifically, the product of the last step is recrystallized from acetonitrile and then from a 1:1.2 water : ethanol mixture (see p. 10 para. 90-91). Kloog et al. do not teach any method for recrystallization or other purification method of the product, and in fact do not at all address the importance of the final crystallization step in achieving

the enantiomeric purity required for pharmaceutical or clinical grade material. The compound of Kloog et al. simply does not meet the high degree of purity required by the instant claims.

In support of the above statements, the applicants submit herewith evidence in the form of a Declaration under Rule 132, wherein the enantiomeric purity of the instantly claimed compound is shown to be higher than that of any previously reported dexanabinol preparation. The results therein clearly establish that Kloog et al. does not teach or suggest a dexanabinol having an enantiomeric purity of over 99.90%, as required by the instant claims, and accordingly the claims are not anticipated. In fact, a dexanabinol having such high degree of purity has not been previously disclosed or suggested. Therefore, the rejection has been overcome and should be withdrawn.

Claims 1-24 were rejected as being obvious over Kloog et al. for the reasons set forth on pages 6-7 of the action.

As noted above, Kloog et al. does not disclose a dexanabinol having an enantiomeric purity of at least 99.90%, as is required by the instant claims. The specification clearly addresses the unexpected advantages conferred by the high degree of purity of the claimed compound. Specifically, as stated in the specification, it is known that the psychotropic activity of cannabinoids resides in the natural (3R,4R) enantiomers, while the opposite synthetic (3S,4S) enantiomers are free of these undesirable effects. Thus, in order to exploit the therapeutic value of cannabinoids, the highly undesirable psychoactive effects would have to be "neutralized", for instance by preparation and selection of synthetic non-psychotropic enantiomers. (see p. 1 para. 4) In the case of 1,1-dimethylheptyl-(3S,4S)-7-hydroxy-Δ^6-tetrahydrocannabinol this is especially crucial, since it has been shown that HU-210, the (3R,4R) enantiomer, is a thousand times more psychactive than HU-211, the (3S,4S) enantiomer. The highly potent psychotropic effects of HU-210 therefore require that HU-211 should be of very high enantiomeric purity. (see p. 2 para. 7 and p. 3 para. 16) Moreover, since clinical trials have shown that therapeutic dosages for humans are quite high and range from tens to hundreds of milligrams per subject, a pharmaceutically useful HU-211 must be of enantiomeric purity that is higher than any reported previously. (see p. 3, para. 12)

As demonstrated by the specification, the applicants have achieved this goal by developing highly pure dexanabinol (HU-211) having an enantiomeric excess of at least 99.90% over the (3R,4R) enantiomer. The high degree of purity is conferred *inter alia* by designing special crystallization conditions which, as mentioned above, are not taught or suggested by Kloog et al. As shown in Table 2 on page 13, the resulting product has very high enantiomeric purity as expressed by an enantiomeric excess of over 99.90%. The compound of Kloog et al. does not achieve this high degree of purity and accordingly does not possess the same advantages of the claimed compound, namely a pharmacologically useful compound which is essentially devoid of any psychotropic effects conferred by the (3R,4R) enantiomer.

It is the Examiner's position that even if the instantly claimed compound is substantially purer than the compound of Kloog et al., and there are new and novel properties, functions or utilities arising from the higher degree of purity, such would not make the instant invention patentable over the prior art. Applicants respectfully refute this position since, as clearly stated above, the ability to generate a highly pure dexanabinol is crucial for cannabinoids in general, and particularly in the case of dexanabinol, due to the high psychotropic effects of the (3R,4R) enantiomer. Accordingly, a highly pure dexanabinol having an enantiomeric excess of at least 99.90% is not only novel, but also unobvious in view of Kloog et al. And despite this need, nothing in the prior art teaches how to achieve it. Thus, the present invention satisfies a need and provides a compound that heretofore was unavailable in the art. In view of the foregoing, the obviousness rejection has been overcome and should be withdrawn.

Accordingly, applicant believes that application is now in condition for allowance, early notice of which would be appreciated. Should any issues remain, the Examiner is invited to contact the undersigned attorney of record in an effort to expedite the processing of this application.

Respectfully submitted,

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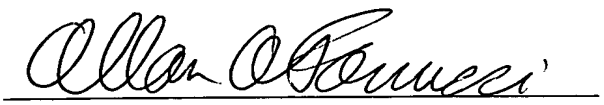

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